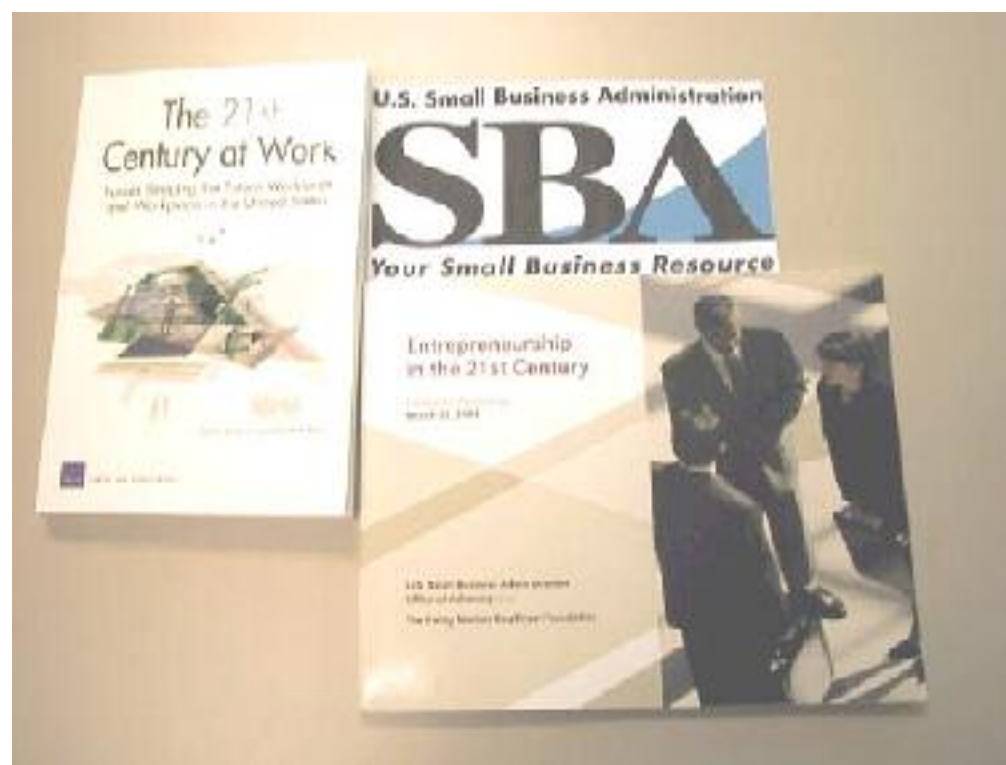


21st Century Jobs





Overview of the 21st Century Workforce & Entrepreneurship

for Region V

A thick, dark blue horizontal bar with rounded ends, positioned below the text "for Region V".

Small Business Impact

- Half of U.S. non-farm income
- Half of U.S. private work force
- 60%-80% of net new jobs
- Small patent firms generate scientifically important innovations at a 13 to 14 times higher rate per employee, than large firms



Methodology of the Overview

- RAND study: “The 21st Century at Work”,
© February 2004 RAND corporation
- SBA conference: “Entrepreneurship in the 21st Century” March 26th 2004, U.S. Small Business Administration Office of Advocacy and the Ewing Marion Kauffman Foundation
- Research institutions:
 - Cleveland Federal Reserve Bank, Kansas City Federal Reserve Bank
 - CASE Western Reserve University, University of Illinois, Loyola University Chicago
 - U.S. Census Bureau, Bureau of Economic Analysis, and others

Region V



Region V Overview

- 51 Million people
- 6 states
- 525 counties
- 328,000 square miles
- 330 rural counties
- GSP of \$ 1.7 trillion
- 12 Senators, 76 members of the House of Representatives

21st century jobs

A thick, dark blue horizontal bar with rounded ends, positioned below the "21st century jobs" header.

The Past

Region V as viewed by the economic historian

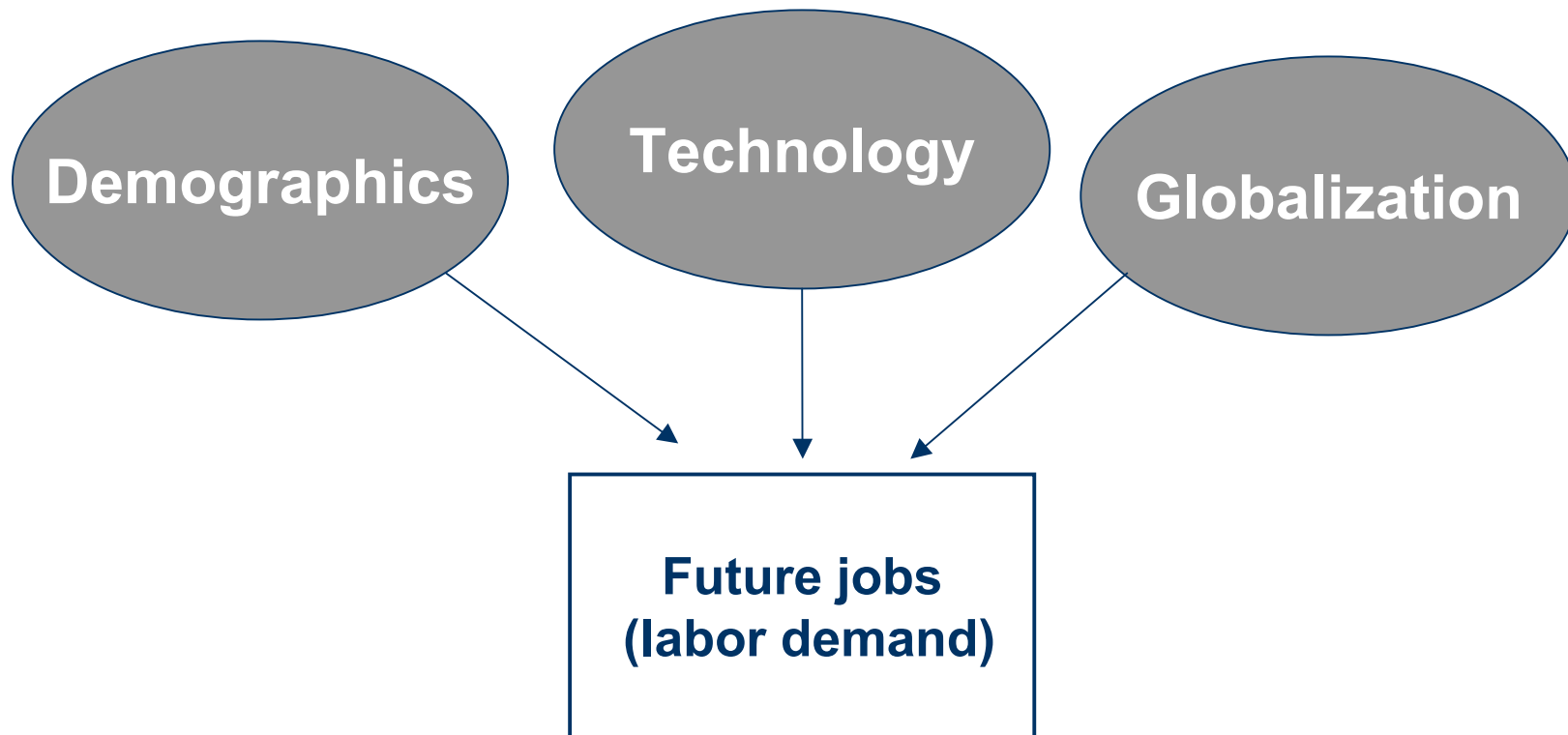
- Confluence of:
 - Industrial Revolution
 - Westward expansion
 - Around 1800.
- ~DeKaser, Chief Economist for National City.

National Factors for Economic Growth

Alan Greenspan,
Chairman U.S. Federal Reserve Bank:

- A nation's knowledge and skill
- Ability to control natural resources ★
- Quality of a nation's legal system ★
- A nation's openness to international trade ★

Forces affecting the 21st century workforce in the U.S.



Demographic Trends

- Slower population growth
- Increasing workforce at a decreasing rate
- Importance of worker skill
- Demographics will shift the demand for Trade & Service

Future labor force supply

- Slower workforce growth ahead
- Imbalance in education system:
 - Too many low skilled workers, too few high skilled workers (Prof. Ed Morrison, CASE Western Reserve University)

Future Knowledge Based Skills

- Strong non-routine cognitive ability
- Abstract reasoning
- Problem-solving
- Communication
- Collaboration

Role of Immigration

- U.S. projected to be the only developed country that experiences material growth until 2050
- 40% of U.S. population growth through immigration
- Brain-drain: highly skilled workers/researchers attracted by the U.S.

Frankfurter Allgemeine

ZEITUNG FÜR DEUTSCHLAND

Aug 20th 2004

- 1 in 7 doctorates from Germany move to the U.S. 30% stay there
- Foreign academics, top 3 nations: China – Japan – Germany (20,000 researchers)
- 3 of 4 German Nobel Price winners work in the U.S.
- 50% of all U.S. based research results come from foreign researchers
- 50% of U.S. masters and doctors candidates are foreigners.
- 500k foreign students registered in U.S. universities

World Population Projections

	<u>2004</u>	<u>2050</u>
United States	293.6	419.9
Russia	144.1	119.1
Japan	127.6	100.6
Germany	82.6	75.1
United Kingdom	59.7	65.4
France	60.0	64.0
India	1,086.6	1,628.0
China	1,300.1	1,437.0

Technology Trends

- Rapid Advance in IT
- Other dominant new technologies:
 - Biotechnology
 - Nanotechnology
- Organizational Change driven by technology
 - Vertical disintegration
 - Decentralization – power down
 - Lifelong learning

21st Century Business



Corporate Structure Change

- Vertical disintegration
- Outsourcing
- Intellectual capital

21st Century workers

Alvin Toffler, Futurist & Author:

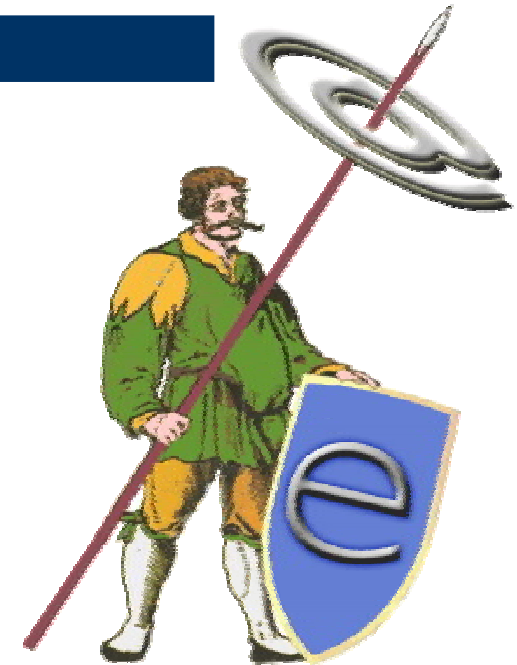
- “The illiterate of the 21st Century will not be those who cannot read or write, but those who cannot learn, unlearn and relearn.”

Globalization Trends

- Increased trade: 10% of GDP in 1960, 25% now
- Forces of Globalization
 - Declining transportation and communication cost
 - IT -> global coordination
 - World wide trade agreements
- The U.S. must find its competitive economic strength:
 - High-tech & Intellectual Property

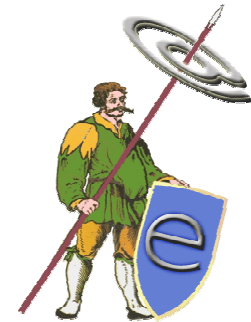
21st Century Challenges

E-Lance



Prof. Thomas Malone, MIT

Harvard Business Review, May 1998



E-Lancers

- Google lists 528,000 entries for “e-lance”
- e-lance.com, e-lancer.com, guru.com
- Marketplaces similar to eBay, Companies post projects and professionals bid for them
- Marketplace providers charge percentage of volume as service-fee

E-Lancer Marketplaces



The screenshot displays the ElanceOnline website, a platform for freelancers to find work. The header includes the 'xguru' logo and navigation links for Home, Freelance Jobs, Freelance Jobs by Category, Jobs, and My Account. A sidebar on the left features a profile picture of a woman and lists categories such as Web Design, Web Marketing, and Graphic Design. The main content area is titled 'ElanceOnline™' and 'Sell Your Expertise in the World's Largest Services Marketplace'. It lists benefits: 'Reach 1,000s of qualified buyers', 'Easily showcase your expertise', and 'Receive exclusive project leads'. A 'Get Started Now' button is prominent. Below this, there are sections for 'Quick Facts' (listing 100,000+ potential buyers, a mobile app, and awards) and 'Open Projects' (listing various service categories). A 'How to Get Started' section at the bottom explains the platform's purpose. The right sidebar contains links for 'Live Help', 'New to ElanceOnline?', 'What's New', and 'FAQs'.

21st century jobs

A thick, dark blue horizontal bar with rounded ends, positioned below the "21st century jobs" text and above the "21st Century" text.

21st Century

Consensus Projections Region V

- “Growth will continue but at a slower rate than in the United States, because...”
 - Traditional industries will continue to shrink
 - Workforce is trained for yesterdays jobs
 - High cost for labor & materials
 - Rural economy is tied to extraction Industries
 - Lower than average immigration
 - Aging population
 - Lack of focus in education system



Prescriptions for the 21st century

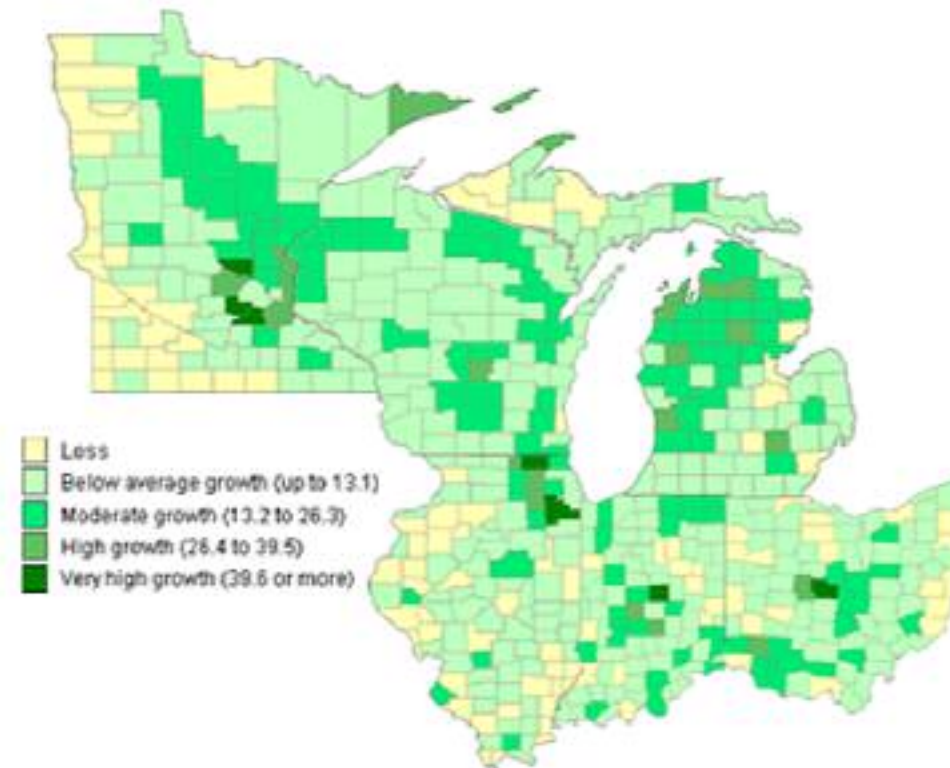
Sandra Pianalto, President & CEO Federal Reserve Bank of Cleveland - March 5, 2004 City Club Cleveland:

- Manufacturing can remain a strong base
- We must invest in our most important asset – our people
- We must accept that economic change is inevitable

Assumptions for Region V

- Location remains a strength
- Skilled workforce
- Excellent transportation system
- Innovative states, cities and private sector
- Strong/historic industrial sector
- Diverse business portfolio
- Key idea/startup locations

Special Region 5 considerations - Rural Region V -



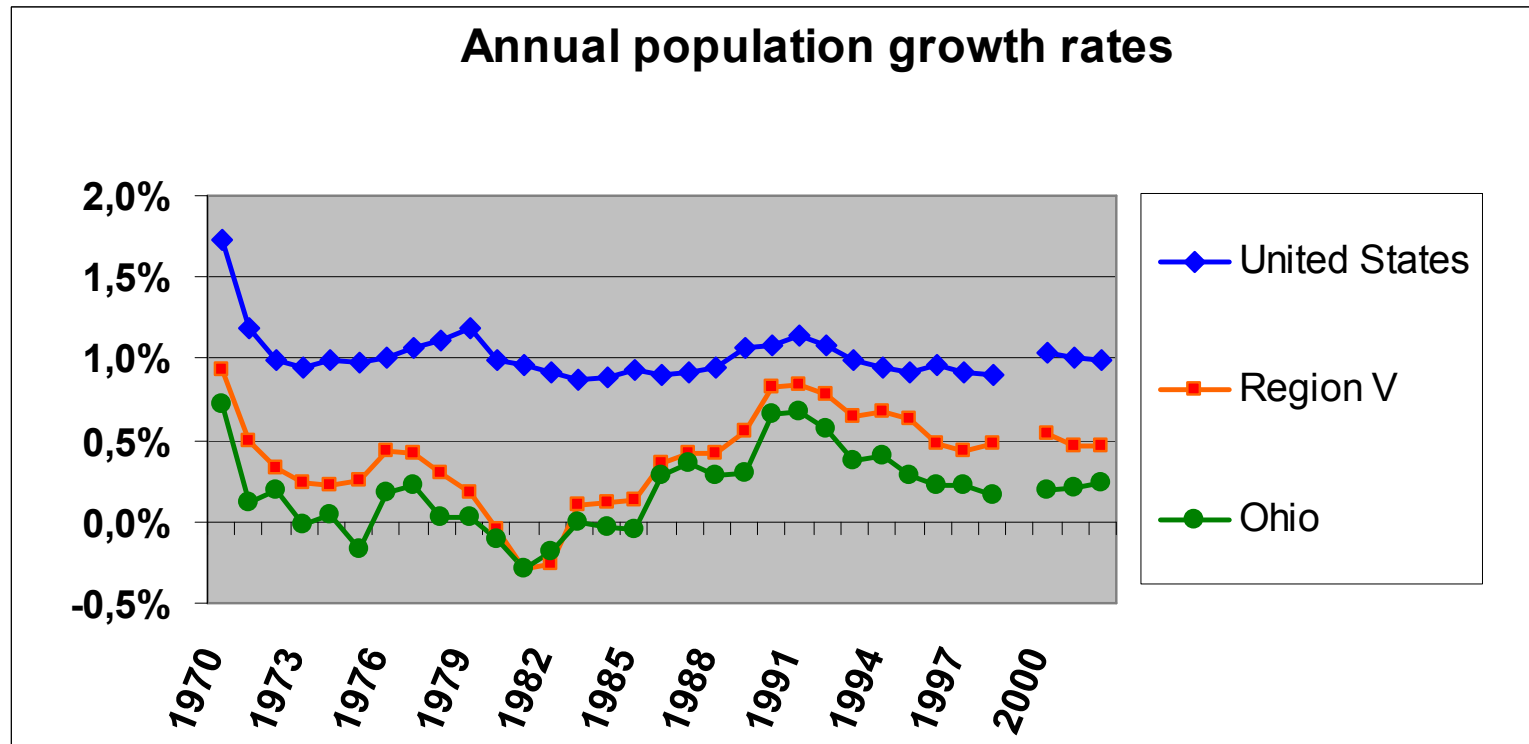
Special Region 5 considerations - Rural Region V -

- Population trends
- Growth counties:
 - Recreation counties
 - Lakes - river - corridor counties
 - Counties near metropolitan areas
 - Micro-metro counties

Requirements for rural economic development

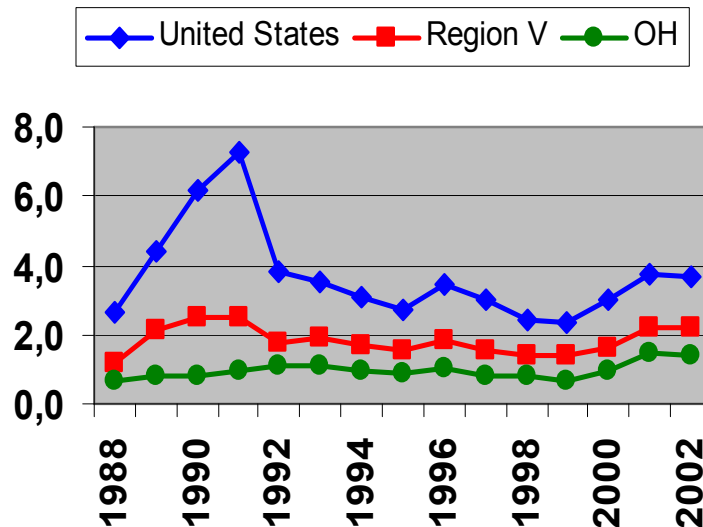
- Feeder roads
- Modern water system
- Stable power source
- Modern IT Systems
 - Extension of fiber optics
- Modern educational system

Region V - Demographic Challenges -

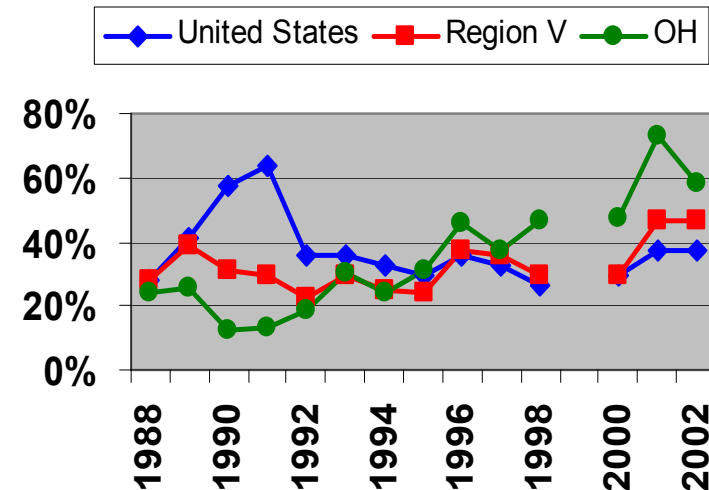


Dependency on Immigration

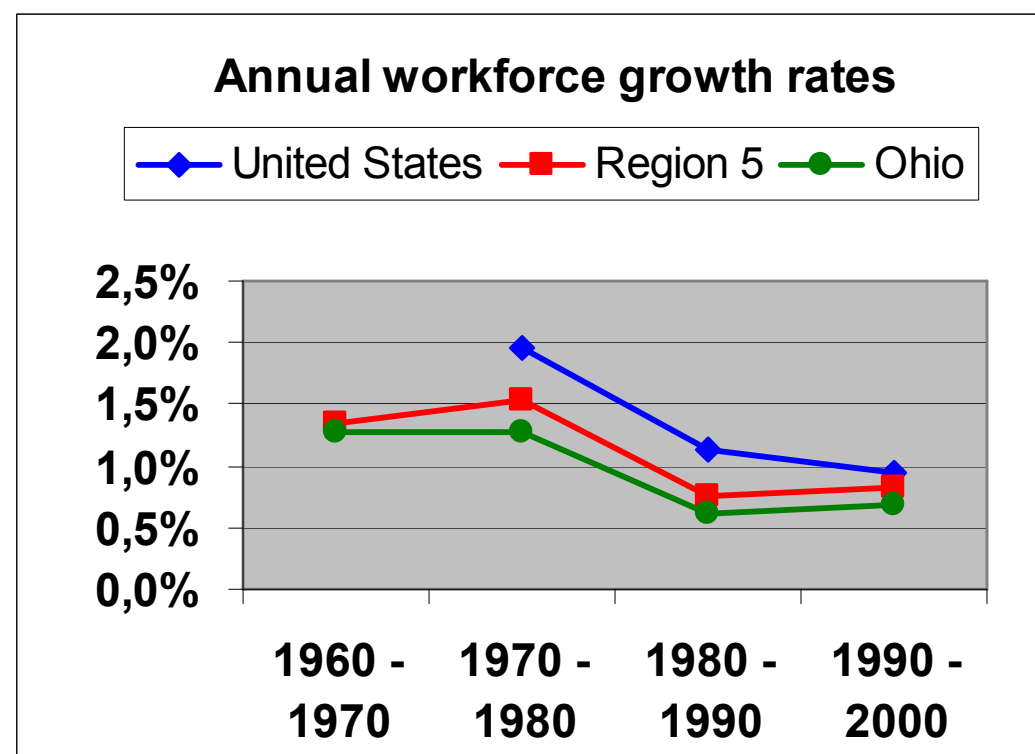
Immigrants per 1000 U.S. Residents



Percentage of Immigration on population increase

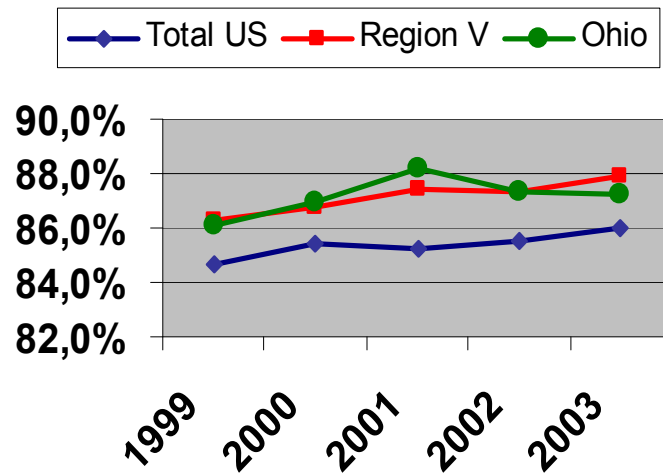


Labor Force

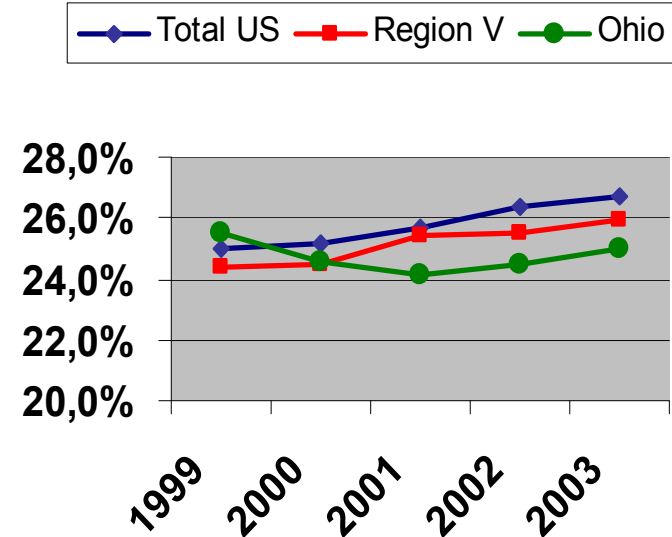


Region V – Educational Challenges -

High school graduate or higher



Bachelor or higher



Region V - cluster formation -

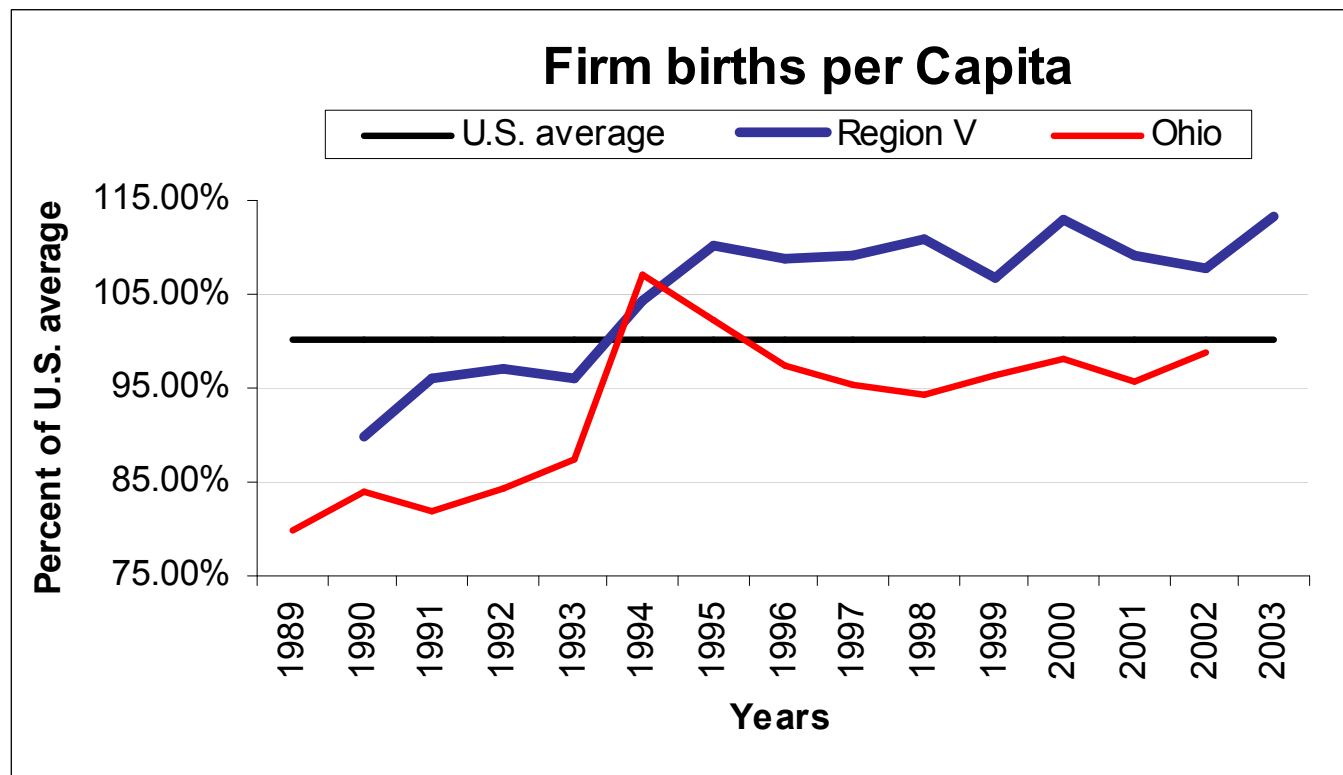
- Two types of cluster formation forces:
 - natural advantages
 - spillovers
 - physical spillovers (e.g. lower transportation costs)
 - intellectual spillovers (e.g. shared consultants, ex-employees)
- These forces can be measured by the Agglomeration Coefficient (Ellison, Glaeser 1997)

Region V - cluster formation -

Name	LQ	Agglomeration Coefficient	Employment change %
Primary metal industries	1.97	medium	-11.97%
Apparel and other textile products	0.41	low	-9.53%
Petroleum and coal products	0.91	high	-7.23%
Transportation equipment	1.86	high	-5.33%
Electrical and electronic equipment	1.10	medium	-4.70%
Industrial machinery and equipment	1.69	low	-3.95%
Printing and publishing	1.22	low	-3.91%
Electric, gas, and sanitary services	0.99	low	-1.90%
Fabricated metal products	1.83	low	-1.43%
Food and kindred products	1.06	medium	-1.41%

Special Region 5 considerations

- Entrepreneurship -



Special Region 5 considerations

- Post-Secondary Educational Institutions -

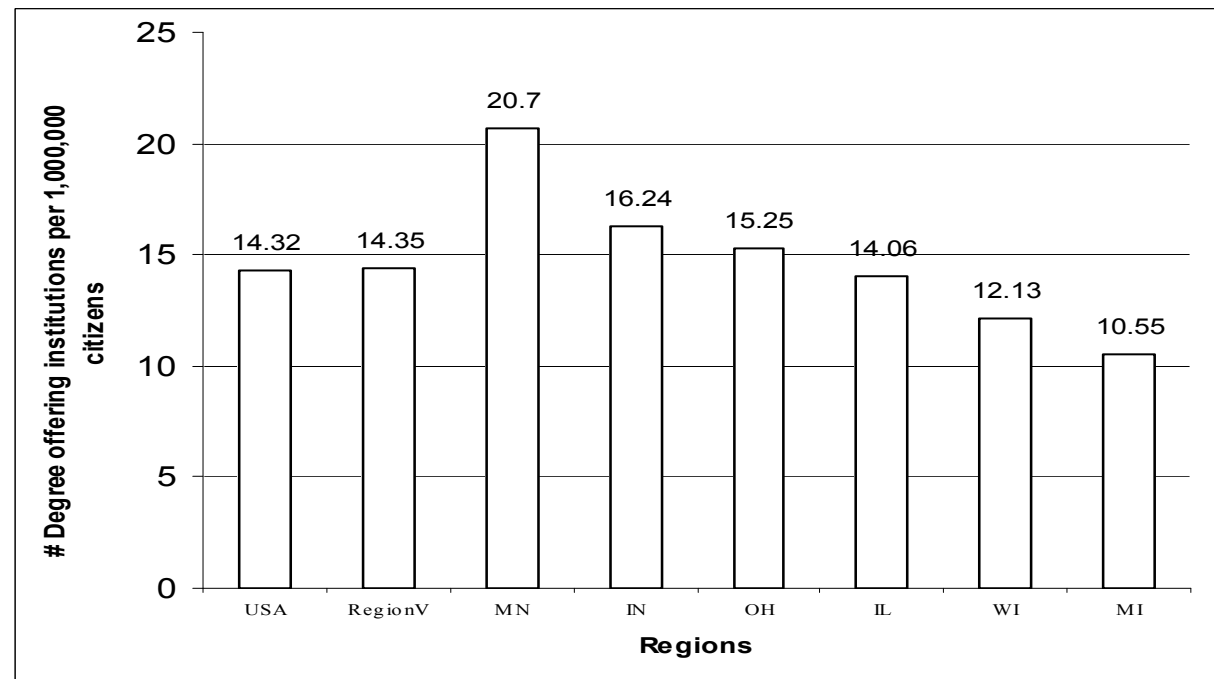
- Number of degree/certificate offering institutions:

	USA	Region V	OH
Associate Degree	2,767	485	128
Bachelor Degree	2,157	376	78
Master Degree	1,616	278	57
Doctors Degree	601	103	23
Degrees total	4,125	727	174
Certificates	2,299	365	143
Degrees/certificates total	6,424	1,092	317

Special Region 5 considerations

- Post-Secondary Educational Institutions -

- degree offering institutions per 1,000,000 citizens:



Special Region 5 considerations

- Research Universities -

- Research Universities have strong regional economic impact
- Drivers for economic impact:
 - Industrial funding
 - High gross license income received
 - High number of licenses generating income
 - High number of exclusive licenses
 - Strong research funding related to licenses
 - Many licenses executed with equity
 - Many startups formed
 - High number of full time employees in Technology Transfer Office
 - Good general university quality

Special Region 5 considerations

- Research Universities -

Top 10 Research Universities ranked by regional economic impact:

State	University	total rank
Illinois	University of Illinois, Chicago, Urbana Champaign	1
Minnesota	University of Minnesota	1
Michigan	University of Michigan	3
Wisconsin	University of Wisconsin, Madison	4
Illinois	Northwestern University	5
Illinois	University of Chicago	6
Ohio	Cleveland Clinic Foundation	6
Ohio	Ohio State University	8
Indiana	Indiana University	9
Michigan	Michigan State University	10

Long-term job projections

- industries with highest number of job gains in Region V:

Name	2000	2010	change	change %
Business services	1,669,920	2,335,173	665,253	39.84%
Health services	2,115,084	2,522,375	407,291	19.26%
Eating and drinking places	1,556,747	1,790,954	234,207	15.04%
Educational services	1,870,516	2,086,513	215,997	11.55%
Social services	519,489	674,663	155,174	29.87%
Engineering and management services	561,075	713,850	152,775	27.23%
Miscellaneous retail	630,911	742,154	111,243	17.63%
Special trade contractors	745,858	850,048	104,190	13.97%
Amusement and recreational services	323,458	406,880	83,422	25.79%
Wholesale trade--durable goods	847,558	913,855	66,297	7.82%

Long-term job projections

- industries with highest number of job gains in Ohio:

Title	2000	2010	change	change %
Business services	366,000	515,900	149,900	40.96%
Health services	492,100	580,900	88,800	18.05%
Finance, taxation, and monetary policy	528,900	588,800	59,900	11.33%
Eating and drinking places	372,500	422,600	50,100	13.45%
Miscellaneous retail	157,700	194,500	36,800	23.34%
Social services	108,900	145,000	36,100	33.15%
Educational services	300,100	336,100	36,000	12.00%
Special trade contractors	162,600	190,900	28,300	17.40%
Engineering and management services	120,100	147,100	27,000	22.48%
Wholesale trade--durable goods	193,000	213,800	20,800	10.78%

Projected Economic Development Strengths of Region V

- Historic location
- Strong industrial base
 - Agglomeration Theory
 - Cluster
- Growing networks
- Excellent base of research universities
- Above average new firm-births
- An awakening to the challenge

Questions?

